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Amendments to Claims

Claim 1 (Currently Amended). An isolated nucleic acid molecule encoding a *cis*-prenyltransferase enzyme, selected from the group consisting of:

- a) an isolated nucleic acid molecule encoding the amino acid sequence as set forth in SEQ ID NOs:4 and 6;
- b) an isolated nucleic acid molecule that hybridizes with (a) under the following hybridization conditions: 0.1X SSC, 0.1% SDS, 65°C and washed with 2X SSC, 0.1% SDS followed by 0.1X SSC, 0.1% SDS; or

an isolated nucleic acid molecule that is complementary to (a) or (b).

Claim 2 (Currently Amended). An isolated nucleic acid molecule as set forth in SEQ ID NOs: 3 and 5.

Claim 3-5 (Canceled).

Claim 6 (Currently Amended). An isolated nucleic acid molecule comprising a first nucleotide sequence encoding a polypeptide of at least 301 amino acids that has at least 70% identity based on the Smith-Waterman method of alignment when compared to a polypeptide having the sequence as set forth in SEQ ID NO:4 or a second nucleotide sequence comprising the complement of the first nucleotide sequence, wherein said enzyme has *cis*-prenyltransferase activity.

Claim 7 (Canceled).

Claim 8 (Original). A chimeric gene comprising the isolated nucleic acid molecule of Claim 1 operably linked to suitable regulatory sequences.

Claim 9 (Currently Amended). A transformed host cell comprising the isolated nucleic acid molecule of Claim 1 ~~chimeric gene of Claim 8.~~

Claim 10 (Original). The transformed host cell of Claim 9 wherein the host cell is selected from the group consisting of plant cells and microbial cells.

Claim 11 (Original). A host cell according to Claim 10 selected from the group consisting of russian dandelion (*Taraxacum kok-saghyz*), rubber tree (*Hevea brasiliensis*), guayule (*Parthenium argentatum*), sunflower (*Helianthus* spp.), tobacco (*Nicotiana* spp.), tomato (*Lycopersicon* spp.), potato (*Solanum* spp.), hemp (*Cannabis* spp.), sorghum (*Sorghum vulgare*), wheat (*Triticum* spp.), maize (*Zea mays*), rice (*Oryza sativa*), rye (*Secale cereale*), oats (*Avena* spp.), barley (*Hordeum vulgare*), rapeseed (*Brassica* spp.), broad bean (*Vicia faba*), french bean (*Phaseolus vulgaris*), other bean species (*Vigna* spp.), lentil (*Lens culinaris*), soybean (*Glycine max*), arabidopsis (*Arabidopsis thaliana*), cotton (*Gossypium hirsutum*), petunia (*Petunia hybrida*), flax (*Linum usitatissimum*) and carrot (*Daucus carota sativa*).

Claim 12 (Original). The transformed host cell of Claim 10 wherein the host cell is selected from the group consisting of *Aspergillus*, *Saccharomyces*, *Pichia*, *Candida*, *Hansenula*, *Bacillus*, *Escherichia*, *Salmonella* and *Shigella*.

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Claims 13-15 (Canceled).

Claim 16 (Withdrawn). A method of altering the level of expression of a plant *cis*-prenyltransferase protein in a host cell comprising:

- (a) transforming a host cell with the chimeric gene of Claim 8 and;
- (b) growing the transformed host cell produced in step (a) under conditions that are suitable for expression of the chimeric gene resulting in production of altered levels of a plant *cis*-prenyltransferase protein in the transformed host cell relative to expression levels of an untransformed host cell.

Claim 17 (Withdrawn). A method according to Claim 16 wherein the method of altering the level of expression of a plant *cis*-prenyltransferase protein in a host cell comprises over-expressing at least one *cis*-prenyltransferase gene selected from the group consisting of SEQ ID NOs: 3 and 5.

Claim 18 (Withdrawn). A method according to Claim 16 wherein the method of altering the level of expression of a plant *cis*-prenyltransferase protein in a host cell comprises over-expressing the *cis*-prenyltransferase gene on a multicopy plasmid.

Claim 19 (Withdrawn). A method according to Claim 16 wherein said chimeric gene is operably linked to an inducible or regulated promoter.

Claim 20 (Withdrawn). A method according to Claim 16 wherein chimeric gene is expressed in antisense orientation.

Claim 21 (Withdrawn). A method according to Claim 16 wherein said chimeric gene is disrupted by insertion of foreign DNA into the coding region.

Claim 22 (Withdrawn). A method according to Claim 16 wherein the altering the level of expression of a plant *cis*-prenyltransferase protein results in a modulation in the defense mechanism of the plant.

Claim 23 (Withdrawn). A method for the production of natural rubber compounds comprising:

- a) providing a transformed host cell comprising:
 - (i) suitable levels of isopentenyl pyrophosphate; and
 - (ii) a *cis*-prenyltransferase gene selected from the group consisting of SEQ ID NOs: 3 and 5, wherein said genes are operably linked to suitable regulatory sequences; and
- b) growing the transformed host cell of (a) under conditions whereby a natural rubber compound is produced.

Claim 24 (Withdrawn). A method for the identification of a polypeptide having *cis*-prenyltransferase activity in a rubber-producing plant comprising:

- (a) obtaining the amino acid sequence of a polypeptide suspected of having *cis*-prenyltransferase activity; and

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- (b) aligning the amino acid sequence of step (a) with the amino acid sequence of a *cis*-prenyltransferase consensus sequence selected from the group consisting of SEQ ID NO:4, 6, 8, 9, and 10, wherein the alignment shows the presence of conserved domains I, IV, and V (SEQ ID NOs: 38-40).

Claim 25 (Withdrawn). A method for the identification of a polypeptide having *cis*-prenyltransferase activity in a rubber-producing plant comprising:

- (a) obtaining the amino acid sequence of a polypeptide suspected of having *cis*-prenyltransferase activity; and
- (b) aligning the amino acid sequence of step (a) with the amino acid sequence of a *cis*-prenyltransferase consensus sequence selected from the group consisting of SEQ ID NO:4, 6, 8, 9, and 10, wherein the alignment shows a sequence of at least about 50 non-conserved amino acids present between the absolutely conserved tyrosine of Domain IV and the first of the absolutely conserved arginine residue of Domain V.